

Application No. 10/579,576
Amdt. dated 2 September 2009
Reply to Office Action of 23 June 2009

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-11. (canceled)

12. (currently amended) A method for producing nitrogen fertilizer from organic waste products in the liquid phase and for hygienizing the wastes and reducing the emissions by thermal treatment using mineral or organic additions, characterized by that the waste product is heated in a vessel without the addition of chemicals such as acids or lyes to temperatures between 40 and 90° C, simultaneously the pressure is first evacuated to 10 to 30 kPa, and then the pressure is increased to 40 to 80 kPa, without being accompanied by appreciable amounts of water, the escaping gas containing carbon dioxide and ammonia is cooled down and then introduced into a second vessel to an aqueous absorption agent or brought into contact therewith, the nitrogen fertilizer formed thereby is discharged and the excess gas not having been absorbed and containing carbon dioxide is conducted back into the process, with maintenance of the temperature in the discharge container at a predetermined value, such that the underpressure between 10 and 80 kPa generated at the beginning of the process by a vacuum pump is autogenously maintained by the progress of the process, and the ammonium nitrogen is nearly fully removed.

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13. (currently amended) A method according to claim 124, characterized by that the excess gas not having been absorbed and containing carbon dioxide is conducted back into the cycle by either

conducting it through the waste product to be treated, or
immediately above the waste product to be treated, or
through the gas cooling system above the waste product to be treated, or
dividing it and conducting a partial flow through the waste product and
another partial flow above the waste product.

14. (currently amended) A method according to claim 124, characterized by that a temperature is adjusted in the front portion of the gas cooling system, which is at least 3 K and at most 15 K below the temperature in the stripping container, whereas in the rear part another cooling-down process to 40°C takes place.

15. (currently amended) A method according to claim 124, characterized by that to the excess gas conducted in the cycle, in addition carbon dioxide in a mixture with other gases is added from outside.

16. (currently amended) A method according to claim 124, characterized by that fermented manure is used as waste product, and that it is heated up to 70 to 85° C. at a reduced pressure.

17. (currently amended) A method according to claim 165, characterized by that the fermented manure is filtered before its thermal vacuum treatment in a per se known manner, and that the hygienized discharge manure formed after the thermal treatment is sprayed on meadows and fields as a virtually odorless sludge liquor stripped from nitrogen compounds, whereas the solid substances separated after filtration are composted.

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18. (currently amended) A method according to claim 124, characterized by that as said aqueous absorption agent, a sulfate solution and/or a gypsum suspension having a content of solid matter of 10% by mass to 50% by mass is used, wherein the latter is stirred in a collection container, and the product containing deposited lime and ammonium sulfate is taken out from the container.

19. (currently amended) A device for producing nitrogen fertilizer according to claim 124, composed of the following essential parts:

- a stripping container for heating at underpressure,
- a collection container for a reaction in a heterogeneous phase,
- a heat storage for heat exchange,
- a vacuum pump,
- a heating water pump,
- a circulation fan,
- a stirrer,

in order to thus secure the circulation movement, and per se known pipelines, shutoff devices, and measurement and control devices.

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20. (currently amended) A device for producing nitrogen fertilizer according to claim 198, characterized by that

the device comprises an additional gas cooling system with an upwards directed separating column and a downwards directed cooler, and

additional pipelines and ball valves,

in order that the circulating gas

can be fed fully or partially into the stripping container above the waste product, or

through the cooling system into the collection container, or

partially into the stripping container into the waste product, wherein the residual flows in case of a division of the circulating gas are optionally fed into the two remaining designated entry positions.